

A new *Astraea* from Bali, Indonesia

(Mollusca, Prosobranchia, Turbinidae, Turbininae)

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A new species of the genus *Astraea* Röding, 1798, subgenus *Astralium* Link, 1807 from Bali (Indonesia) is described and compared with *Astraea* (*Astralium*) *semicos-tatum* (Fischer, 1875).

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Introduction

During their research on material of Turbininae the authors found a sample of small *Astraea*'s which were collected 1978 at Tanah Lot, Bali, Indonesia in shallow water. The species could not be identified as a known species and therefore is described here as new.

Astraea danieli, spec. nov.

Figs 1, 3

Types. Holotype: height 13.7 mm, width 15.1 mm, in Zoologische Staatssammlung, München (ZSM Moll 20050941). – Paratypes [height/width in mm]: No. 1-7 in collection Kreipl, Öhringen: p1: 15.6/17.0; p2: 15.5/16.1; p3: 16.3/15.6; p4: 9.9/13.5; p5: 16.0/17.5; p6: 16.4/16.8; p7: 16.2/17.0; no. 8-12 in collection Alf, Weidenbach: p8: 12.7/14.6; p9: 16.5/15.5; p10: 11.9/14.2; p11: 10.1/13.0; p12: 16.7/15.7; no.13 in Senckenberg-Museum, Frankfurt: p13: 15.8/16.6; no. 14 in collection Dekker, Winkel, The Netherlands: p14: 16.1/16.6; no. 15-19 in collection Hemmen, Wiesbaden: p15: 15.0/16.0; p16: 15.2/15.5; p17: 14.7/16.2; p18: 15.4/15.5; p19: 15.3/15.7.

Type locality. Tanah Lot, Bali, Indonesia. In shallow water on rocks with algae.

Etymology. The species is named after the senior author's son Daniel Alf.

Description

Shell very small, coniform, adults reaching a size of about 16 mm, thick shelled, most shells taller than wide ($h/w = 0.73-1.06$, mean 0.93).

Teleoconch of about 5 whorls which are concave to straight on the early whorls and straight to convex on the last whorls. Whorls with axial ribs (10-12 on the body whorl) which may cross the whole whorl and be connected from whorl to whorl or may be reduced to short riblets. Besides this the whorls are sculptured with irregular, incised growth striae.

Base straight, umbilical area slightly depressed, periphery rounded. Sculpture of base consisting of microscopic growth striae and one spiral row of tubercles which are well expressed in juvenile specimens and may almost fade away in adult specimens.

Suture incised, first whorls slightly overhanging the following whorl.

Columella evenly rounded with one tooth at the base and one or more weak denticles on the basal lip. No umbilicus.

Colour of the shell greyish with a greenish touch to dark olive green, base slightly lighter; ribs on the whorls white. Inner part of the columella nacreous, outer part light blue. Edge of the lip also light blue. Aperture nacreous within.

Operculum oval, smooth to slightly rough, relatively thick with the outer edge depressed. Colour

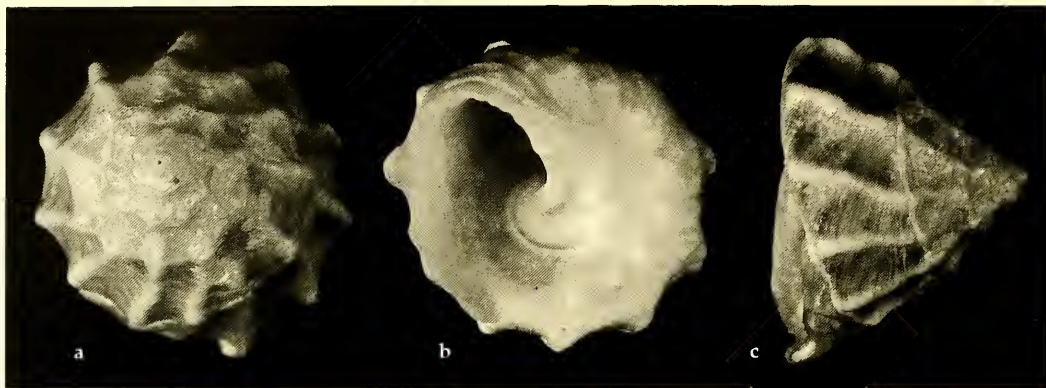


Fig. 1. *Astraea (Astralium) danieli*, spec. nov. Holotype. a. View from top. b. View from base. c. View from side.

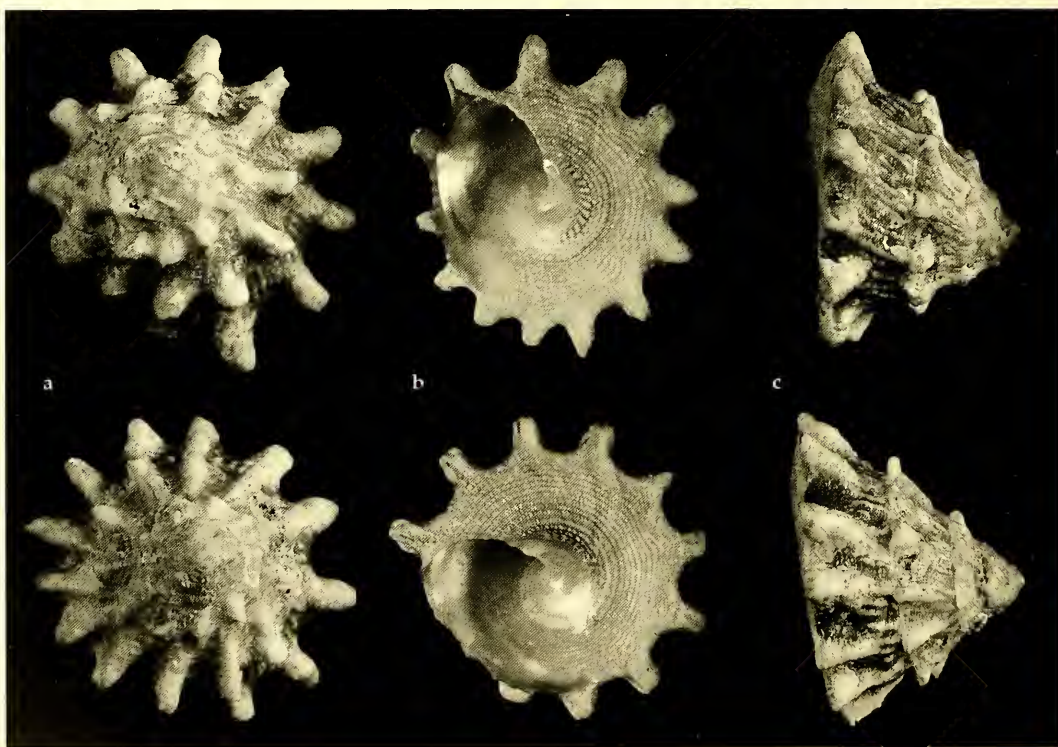


Fig. 2. *Astraea (Astralium) semicostatum* (Fischer, 1875). a. View from top. b. View from base. c. View from side.

bluish white, the outer edge dark blue, sometimes with blue growth striae.

Distribution. Only known from the type locality at the island of Bali, Indonesia, in shallow water.

Discussion

The only species which shows any similarity with *Astraea (Astralium) danieli*, spec. nov. is *Astraea (Astralium) semicostatum* (Fischer, 1875) which has much stronger ribs and additional riblets between these, a sharply angled periphery, a base with well expressed spiral rows of crescent shaped lamellae, and

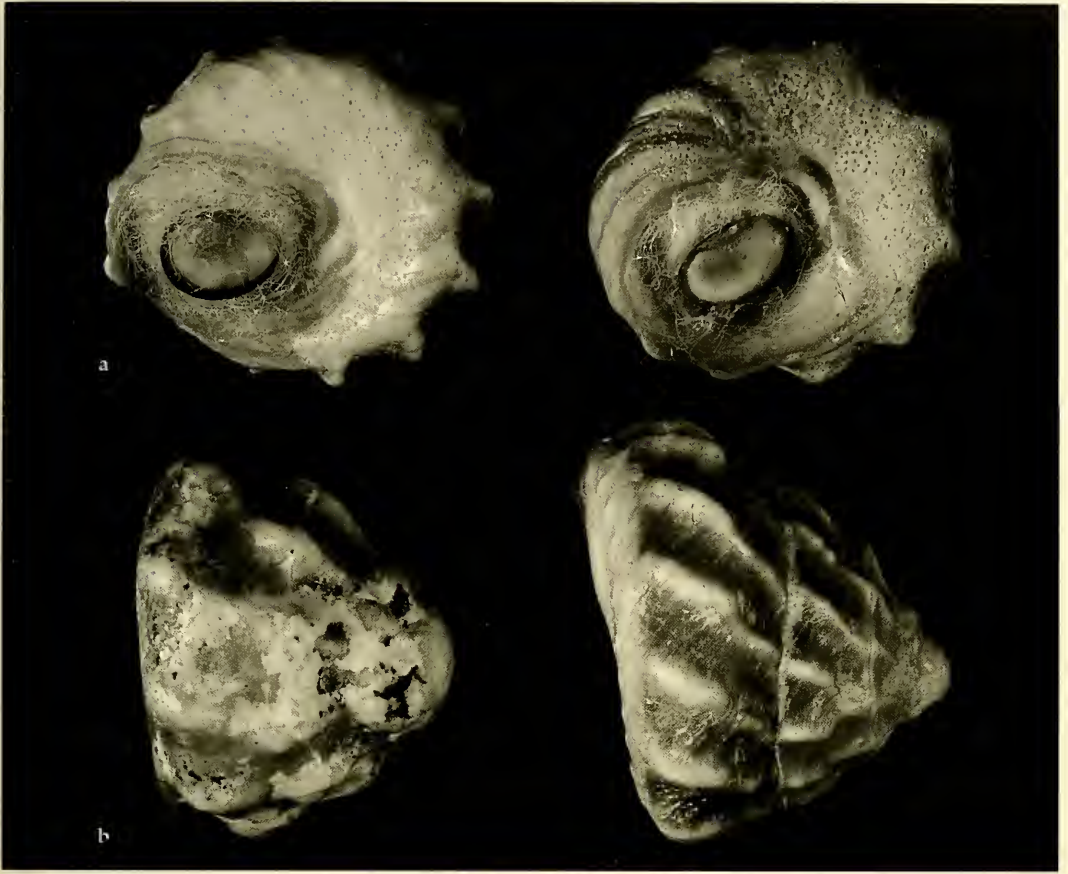


Fig. 3. *Astraea (Astralium) danieli*, spec. nov. a. Bases of paratypes 5 (left) and 7 (right), in paratype 5 the tubercles are well visible. b. Paratypes 5 and 7, view from side.

which is larger at the average. *Astraea (Astralium) stellare* (Gmelin, 1791) also has a blue umbilical area and operculum but is much larger (up to 50 mm), has an angulate periphery, a base with rows of semilunular lamellae and relatively larger axial ribs which give the base a star-like appearance. *Astraea (Astralium) aureum* (Jonas, 1844) has a yellowish operculum and base and is restricted to Australia.

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